REMARKS

This Amendment is filed in response to the First Office Action dated December 20, 2006, which has a shortened statutory period set to expire March 20, 2007.

Applicant Acknowledges Specificity Of Rejections

Applicant greatly appreciates the specificity of the rejections in the First Office Action. Such specificity allows Applicant to focus and direct this response in a manner that can quickly address the areas of concern.

In accordance with the Examiner's request, Applicant has reviewed the cited references in their totality, not just the cited portion of such references.

Applicant Addresses Objection To Claim 8

The First Office Action suggests an amendment to clarify Claim 8. Applicant has amended Claim 8 in the manner suggested and therefore requests reconsideration and withdrawal of the rejection of Claim 8.

Claims 1-10 Are Directed To Statutory Subject Matter

Claim 1, as amended, now recites in part, "outputting a modified analog variable for use in simulation". Applicant respectfully submits that this limitation clarifies the tangible result of the recited modeling tool. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 1.

Claims 2-10 depend from Claim 1 and therefore are patentable for at least the reasons presented for Claim 1. Therefore, Applicant also requests reconsideration and withdrawal of the rejection of Claims 2-10.

Claims 1-2 and 4-10 Are Patentable Over Antsaklis And Christen

Claim 1 recites in part,

> forming a composite equation for the analog variable constructed as a weighted sum of the set of state equations;
>
> using a set of ramp functions as weights in the composite equation varying continuously between 0 and 1, the set of ramp functions forming a state vector and ensuring continuity of the analog variable during a state transition.

Applicant respectfully submits that Antsaklis and Christen fail to teach these limitations. The Examiner correctly characterizes Antsaklis as not teaching these limitations. Applicant respectfully traverses the characterization that Christen teaches these limitations.

On page 1269, in the paragraph beginning, "An alternative mechanism", Christen teaches that a mechanism to influence a continuous solution with a signal is to use either "S'Ramp" or "S'slew". S'Ramp ramps linearly over the specified rise and fall time from the previous value of S to its new value, starting at the time of the event. S'Slew does the same, but with specified slopes.

Christen provides a VHDL-AMS model of a one-bit D/A converter that includes a voltage output using a ramp function: vout == veff'ramp(tt) - iout * reff'ramp(tt), wherein veff (the effective voltage) and reff (the effective resistance) are local signals that can be assigned values by indexing the corresponding tables (see v_table and r_table as defined in the model of Fig. 7). As noted in the above equation, the output voltage of the D/A converter is the effective voltage minus the voltage drop across a series resistor (i.e. iout * reff'ramp(tt)). As also noted in this equation, both voltage and resistance ramp linearly from their previous value to their new values with rise and fall time tt.

This technique of accessing start and end values of one or more variables from a table and applying a ramp or slew functions to interpolate values for those variables is distinguished from the technique recited in Claim 1. Specifically, Applicant provides a **weighted sum** of a **set of state equations**, wherein **each ramp function varies continuously between 0 and 1**. Thus, Applicant's technique can provide a ramp between the **equation currently describing a variable** and a **target state equation**. Additionally, Applicant's technique advantageously allows possibly more than 2 state equations to be concurrently contributing to the value of the variable. Thus, Christen teaches a different and more limiting technique than that recited in Claim 1.

Because neither Antsaklis nor Christen teach forming a composite equation for the analog variable constructed as a weighted sum of the set of state equations and using a set of ramp functions as weights in the composite equation varying continuously between 0 and 1, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 1.

Claims 2 and 4-10 depend from Claim 1 and therefore are patentable for at least the reasons presented for Claim 1. Therefore, Applicant also requests reconsideration and withdrawal of the rejection of Claims 2 and 4-10.

Claim 3 Is Patentable Over Antsaklis, Christen, And Kazmierski

Claim 3 depends from Claim 1 and therefore is patentable for at least the reasons presented for Claim 1. Kazmierski fails to remedy the deficiency of Antsaklis and Christen with respect to Claim 1. Specifically, Kazmierski does not teach forming a composite equation for an analog variable constructed as a weighted sum of the set of state equations and using a set of ramp functions as weights in the composite equation varying continuously between 0 and 1. Therefore, Applicant also requests reconsideration and withdrawal of the rejection of Claim 3.

CONCLUSION

Claims 1-10 are pending in the present application. Allowance of these claims is respectfully requested.

If there are any questions, please telephone the undersigned at 408-451-5907 to expedite prosecution of this case.

Respectfully submitted,

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